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TECHNICAL AND TRADE SCHOOLS

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By

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Office of Education

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INTRODUCTION

Most technical and vocational schools of the United States are less than 25 years old.

The swift rise of these schools to an important place in American education is dramatically revealed in two statements. The first is taken from an address delivered in 1907 before the National Education Association by George A. Merrill, principal of the California Mechanical Arts School and director of the Wilmerding School of Industrial Arts. The second is from the Annual Report of the Federal Board for Vocational Education for 1932.

1907

"The most remarkable thing about trade schools is their absence—which is almost complete. . . . In the South there are some for Negroes. There are a few for watchmakers; a few textile schools; a number of dressmaking schools—the last named frequently for the purpose of teaching systems of drafting garments. In some of the reform schools trades are taught. . . . There are institutions with trade-school features for dependent youths, such as the Williamson Free School of Mechanical Trades, and Girard College. There are a number of evening supplementary schools, some that have developed out of the work of manual training high schools, and others that are maintained incidentally by religious, charitable, and philanthropic societies. Several large manufacturing concerns have organized their apprentice systems in a manner approximating actual schools. . . . Some are conducted on strictly a business basis for personal gain. The New York Technical School, the largest of all, admits young men from 17 to 25 years of age, and teaches them trades during an attendance of three and four evenings a week, from 7 to 9:30, for 1, 1½, and 2 years, the length of time being different for different trades. This is the list of American trade schools—all but complete." [1]

[1] Merrill, George A. Trade schools and trade unions. Addresses and proceedings of the National Education Association, 1907. pp. 1048-49.

1932

The Sixteenth Annual Report of the Federal Board for Vocational Education shows that the total enrollment [2] in vocational courses in schools or classes organized under State plans equaled almost one fourth of the enrollment [3] in all types of public high schools.

The vocational enrollment includes a considerable percentage of persons receiving instruction in technical subjects organized in accordance with a State plan for vocational education. The greatest impetus to vocational and technical training of less than college grade came as a result of the passage of the National Vocational Education Act (Smith-Hughes law) in 1917, providing Federal aid to the States for vocational education. Growth in vocational and technical education has been characterized not only by the rapid increase in enrollments and number of schools giving vocational instruction, but also by the increase in the number and variety of subjects included in the curriculum.

PURPOSE OF THE STUDY

The rapid growth of vocational and technical education of less than college grade necessitates from time to time studies that furnish information on the present status of these two closely related phases of education. For the study of numerous problems arising in the fields of technical and vocational education, there are needed, in addition to comprehensive mass statistics, other forms of information that reveal pertinent educational facts and practices in individual schools or groups of similar schools. This study was undertaken for the purpose of supplying information, to be collected from a limited number of schools, on the following selected list of items which have significance for technical and vocational education: Enrollments, number of teachers, day and night classes, subjects taught, length of term, library and gymnasium facilities, capital outlay, endowments, and entrance requirements. The presentation of data will show the actual situation in regard to the items studied, and will indicate the status and comprehensiveness of technical and vocational training programs.

SCOPE AND PLAN OF THE STUDY

The schools selected for the study are taken from lists on file in the Office of Education and include both public and private institutions. Most of the private schools are endowed; a few are proprietary schools. A number of the privately endowed schools are operated as practically free schools for certain specified classes of

[2] Total enrollment in vocational courses in schools or classes organized under State plans approved by the Federal Board for Vocational Education, including those federally aided and nonfederally aided, was 1,176,162.

[3] Enrollment in all types of public high schools including junior, junior-senior, and regular high school was 5,465,932.

persons or for a given locality or region. In this study the classification of schools into kinds is based largely upon the names of the schools. Information on the kind of work carried on in a given school was used as a check on this method of classification. However, it is to be noted that some vocational and trade schools include a considerable amount of technical instruction in their programs. On the other hand, a school having the term "technical" in its name may devote a major part of its program to vocational courses.

In this study schools have been classified as technical when the word "technical" appears in the school's title.

The information for each school was obtained by means of a question blank, prepared for the special purpose, which was directed to the principal of the school. A number of schools furnished supplementary information by returning with the form, printed or mimeographed materials. A considerable amount of pertinent information taken from these materials is embodied in the report. The blank form included questions on enrollments, number of teachers, entrance requirements, length of school year, value of buildings and grounds, endowment funds, subjects included in the program of instruction, library and other auxiliary educational facilities.

Early in the year 1933 the question blank was sent to a few more than 200 schools which had been previously reported as giving instruction in technical and vocational subjects. Approximately 175 forms were returned. A few of the private schools and a small number of the public schools to which the form was sent reported that instruction in technical and vocational subjects was not given. However, 160 schools returned blanks answering all essential questions. Of these 160 schools, 123 are public and 37 private.

SUMMARY OF FINDINGS AND IMPLICATIONS

KINDS OF TECHNICAL AND TRADE SCHOOLS

Information was obtained in this study bearing upon kinds and organization of technical and vocational schools. The private schools included in the study are mostly of the endowed type, and in the services they render are very similar to public schools. In general, however, the private schools with considerable endowment are able to try out new kinds of courses and to make innovations in instruction that public schools hesitate to undertake.

There are various provisions for the organization of public technical and vocational schools. Usually the public schools are local schools, under the control of the local board of education, and constitute an integral part of the local school system. Such schools frequently receive State aid or Federal aid through the State department of education, or both State and Federal money. In a few States the

State itself has established schools open to persons from any place in the State, or in case there is more than one State school open to persons of the district which the school serves. Connecticut, for example, has established trade schools in each of 11 districts. In 1931 the legislature of that State passed an act providing that any "town or city in which a State trade school is not maintained shall pay the reasonable and necessary cost of railway or other transportation of any person between the ages of 14 and 21 years who shall reside with his parents or guardians in such town or city, and who, with the written consent of the board of education, shall attend a State trade school in another town or city as a regular all-day pupil or as a high-school cooperative pupil; provided no tuition charge shall be made." Thus has Connecticut made provisions for trade training for all parts of the State.

New Jersey has established a system of county vocational schools operated under a separate county board for vocational education. Wisconsin has a system of vocational schools, mainly for part-time and evening classes, which are maintained and operated by separate State and local boards for vocational education. This plan does not deny to the regular local school systems the right to establish vocational schools and classes. In fact, some local schools do maintain such classes. State support, however, goes to the schools operated under separate State and local school boards. North Dakota maintains a State school of science conducting trade school classes at Wahpeton. This is strictly a State school, open to any one in the State meeting the entrance requirements.

LENGTH OF SCHOOL YEAR

Data on the number of months 160 schools are in session are compiled, by kinds of schools, in table 1. Sixty-nine, or 43 percent, of the 160 schools reporting are in session for 10 months. Of this number 62 are public schools and 7 private schools. Fifty-one of these public schools are vocational schools and 11 are technical schools. Fifty-three, or 33 percent, of the 160 schools are in session from 11 to 12 months. Some of the schools reporting that they are in session for 12 months, qualify the statement by saying that they are closed for a short time just previous to the beginning of the fall session. For example, the State trade school, at New Britain, Conn., reports as follows on the length of term in the State trade schools: "The trade school year is divided into two terms—a long term of about 40 weeks beginning in September and ending in June, and a short term of about 8 weeks beginning in July. The trade schools are closed for a vacation period of 3 weeks during the latter part of August and the early part of September each year. The day school is in session from 8 to 12 a.m., and from 1 to 5 p.m. No classes are

held on Saturday." Only 38 schools report sessions of 9 months or less. No public day vocational school has a shorter term than 8 months, and only two schools are reported having a term of that length.

ENROLLMENTS AND TEACHERS

The total enrollment for the 152 public and private technical and vocational schools listed in tables 2, 3, and 4 is 158,054. In table 2 are listed 21 public technical high and technical-trade schools which have a total enrollment of 49,337. The total night enrollment for these schools is 30 percent of the total day enrollment. The total enrollment for the 33 private technical and trade schools given in table 3 is 15,904. For these private schools the total night enrollment is 55 percent of the total day enrollment. It is thus apparent that the proportion of night enrollment to the day enrollment is much larger in the private technical and trade schools than it is in the public technical high and technical-trade schools.

The total enrollment for the 98 public trade and vocational schools listed in table 4 is 92,813. For these schools the total night enrollment is 66.5 percent of the day enrollment, which is more than double the percentage for the same item for the public technical high and technical-trade schools.

These percentages indicate that the public technical high and technical-trade schools are not giving night instruction, in proportion to their day instruction, as are the public vocational schools. Neither are they equaling the record for this item made by the private technical and trade schools. With the increased need for technical knowledge on the part of persons already in employment, it seems reasonable to ask the question: Are public technical high and technical-trade schools providing adequate evening instruction to meet the needs of employed persons who would benefit by instruction in technical phases of the occupational fields in which they are employed?

Of the 21 public technical high and technical-trade schools listed in table 2, 15 enroll students of both sexes and 6 enroll males only. Of the 33 private technical and trade schools listed in table 3, 16 enroll students of both sexes, 16 enroll males only, and 1 is for girls only. Of the 98 public trade and vocational schools listed in table 4, 40 enroll students of both sexes, 56 enroll males only, and 2 are for girls only.

The 21 public technical high and technical-trade schools employ as full-time teachers, 909 men and 596 women; the 33 private technical and trade schools have as full-time teachers, 275 men and 42 women; the 98 public trade and vocational schools employ as full-time teachers 1,447 men and 571 women. Instructors reported as part-time teachers are also listed for each type of school. However, the number of part-time teachers reported by some schools is not exclusive of duplicates,

as in some instances night teachers who are also full-time day teachers, are included in the number of part-time teachers reported.

INSTRUCTION

Table 5 lists the number of schools, by types of schools, giving instruction in the subjects indicated. The 160 schools reporting on subjects of instruction include 123 public and 37 private schools. The table lists 93 subjects given by these schools. This number does not include all the subjects given as separate courses. For example, several subjects in special fields of electricity were listed under a fewer number of more comprehensive titles. A few exceptional subjects, for example, meat cutting, are not listed.

By inspection of table 5 it can be seen that, in general, there is a larger percentage of vocational and trade schools giving night courses in subjects offered during the day than there is of technical schools. For example, electricity in vocational schools is given as a day course in 52 schools and as a night course in 27; in the technical schools it is given as a day course in 20 schools and as a night course in 4 schools. Machine drawing in vocational schools is given as a day course in 17 schools and as a night course in 14; in technical schools it is given as a day course in 15 schools and as a night course in 8 schools. Printing in vocational schools is given as a day course in 24 schools and as an evening course in 14; in technical schools it is given as a day course in 9 schools and as an evening course in 3 schools.

As an indication of the comprehensive way in which vocational and trade schools are covering the subjects listed in table 5, it is pointed out that the vocational schools give instruction in all the subjects offered by the technical schools except those of accounting, cement, comptometry, theory of mechanics, and structural drafting. Even these differences are probably accidental. This, however, is not to be interpreted as meaning that vocational schools give as advanced instruction in all these subjects as do the technical schools. It is probably safe to imply that experience has shown that there is related technical knowledge for many vocational lines of work which is valuable for employed persons and which vocational schools are prepared to give. There is an implication from such studies as this one that traditional technical schools have neglected, to some extent at least, to provide this related type of technical training, and that the vocational and trade schools are including it in their programs.

Some of the high schools (the Edison Technical and Industrial High School of Rochester, N.Y., for example) give 4-year industrial courses for which an industrial high-school diploma is granted. In the Edison school the boys in the industrial courses work 3 hours a day in the shops and spend 3 45-minute periods in related drafting, mathematics, and English. The remaining time throughout the course

is given to such subjects as history, economics, civics, and science. This school also gives a technical course, beginning in the third year, which prepares for college.

Some of the technical high schools give instruction that is of college grade. For example, the Baltimore Polytechnic Institute, a public secondary school, gives an advanced college preparatory course which "is designed for those who wish to enter the second year of a technical college." As a result of the practice of colleges giving advanced credit for work done in technical subjects by high schools, the question as to what levels of technical instruction should be undertaken by high schools has been raised. If college technical courses in the lower levels can be successfully given in 4-year high schools, it seems reasonable to assume that such instruction, where possible, should be given in the secondary school, and that colleges should introduce more advanced courses in the upper years and reduce some of the work now given in the upper years to the lower levels to fill in the gap in the curriculum resulting from the high schools taking over some of the subjects.

Some of the technical high schools have been listed as technical-trade schools as they give both technical and trade courses. For example, the East Technical High School of Cleveland, Ohio, gives a college preparatory course and 17 "specializing courses", all leading to a high-school diploma. Work in the ninth and tenth years is the same for all students except those enrolled in the applied art department. During the eleventh and twelfth years all except college preparatory students spend one half the school day, four periods, at their chosen technical work. The 17 "specializing courses" are: Applied art, aeronautics, applied electricity, architectural drawing, automotive work, cabinetmaking, chemistry, commercial art, foundry, horticulture, machine drawing, machine shop, music, pattern making, printing, sheet metal, and special gymnasium.

In the form sent out, questions were included to obtain information as to the most advanced instruction given in mathematics, drafting, chemistry, and physics. Sufficient has been said in discussing technical schools to indicate that these schools give college preparatory courses and, in some instances, more advanced instruction in these subjects. In the trade schools shop mathematics, either as related work or as a separate subject or as both, is usually required. Almost 10 percent of the vocational schools report giving some instruction in trigonometry. About the same percentage give some instruction in geometry, and a few vocational schools report giving instruction in algebra. A still smaller number report some instruction in calculus. Any advanced instruction in mathematics given by vocational schools is usually for special classes in technical

phases of industrial work. In some trade schools any science instruction that is given is taught by the trade teachers as a related subject. In other trade schools there is a separate science course taught by a special teacher. The reports indicate that probably 5 percent of the vocational schools give instruction in drafting that is listed as machine, tool, or gear design.

A few of the vocational schools and a few more of the technical schools include instruction in some of the graphic arts, such as industrial art and commercial art. The public schools are probably giving more attention to art and drawing than formerly. The Newark Public School of Fine and Industrial Art, Newark, N.J., is an outstanding example of public-school provisions for instruction in art. The school is maintained by the board of education of Newark for the promotion of art in education, industry, and commerce. Instruction is given in lettering, design, wood carving, ceramics, costume illustration, show-card writing, interior decorating, design and applied arts, mechanical drawing, architectural drawing, die cutting, and jewelry design. Instruction is free to residents of Newark. Instruction is given in both day and evening classes. Saturday classes are provided for children 12 years of age and over. Applicants under 16 years of age are not admitted except to the high-school department and to the Saturday morning classes. The Newark school is a recognition of public responsibility for providing training in art and drawing and in their application to vocational work

An example of a school devoted to the arts is the School of Industrial Arts, Trenton, N.J. The school is supported by the State of New Jersey and the city of Trenton and is in charge of a Board of Trustees of Schools for Industrial Education of the City of Trenton appointed by the governor of the State. The school gives day and evening courses "in fine art, industrial art, or fine art applied to the industries, in several of the art crafts, in dressmaking and millinery, and for the training of artisans in clay, wood, and metal." It gives instruction in evening classes to employed men in vocational courses in machine-shop practice, building construction, auto mechanics, electrical work, and ceramic trades. Day classes are maintained for boys in preparation for occupational work in the industries. Saturday classes are provided for children.

The nautical school, which is a special curriculum school, is found in a few States, including the publicly supported schools in Massachusetts, California, New York, and Pennsylvania. These schools are maintained for the purpose of preparing young men for service as deck and engineering officers in the merchant marine. They receive a special Federal appropriation. The Massachusetts Nautical School gives two courses, one in seamanship navigation, and one which includes both marine and electrical engineering. The course of study

is 2 years in length. During the first year all students take the prescribed course including both seamanship and engineering. At the beginning of the second year "the cadets are assigned either to the seamanship or engineering division according to their aptitudes."

As an example of the emphasis placed by a vocational school on instruction for adults, attention is called to a recent bulletin entitled, "The University of the Adult", issued by the director of the vocational school of Green Bay, Wis. In this publication the director says, "This bulletin has been prepared in response to the numerous requests on the part of adults for information regarding the program of educational opportunities available for adults in the Green Bay Vocational School. That the school is functioning in the lives of adults of Green Bay is evidenced by the approximately 3,000 who were enrolled in the evening-school department last year." This school is housed in a new and modern building "planned for the dual purpose of giving ample facilities to the adult as well as to the youth."

As an example of the time allotment for curriculum subjects in a 4-year trade school, the program of the Beverly (Mass.) Trade School is cited. That school starts the vocational curriculums in the sophomore year, and they are continued for 3 years. They are strictly trade courses and "aim to give a very definite and thorough preparation in printing, cabinet and carpentry work, automobile repair work (both mechanical and electrical), and sheet-metal work." However, this school does not neglect cultural phases of education. Academic subjects are taught throughout the course to all pupils. Shop work and academic subjects are on alternate weeks. For example, the first week, 35 hours of shop work are required of all classes. On the alternate week there is related instruction in mathematics, science, drawing, and English for 1,250 minutes, and instruction in academic subjects for 850 minutes, making a total of 35 hours. This division of time is rather typical for a number of public trade schools in the East.

ENTRANCE REQUIREMENTS

Entrance requirements for the technical high schools, and usually for the vocational or industrial high schools (for example, those in New York State), are equivalent to those maintained by the regular high schools. Sometimes the vocational high schools are more discriminating in that they may require, in addition to the completion of the elementary grades, that the applicant show evidence of being able to profit by the vocational training he wishes to undertake. Many vocational schools are now requiring entrance qualifications in excess of the general practices relative to minimum ages that were followed as a result of the National Vocational Education Act of 1917, namely, 14 for day-school classes and 16 for night-school classes. The results of this study indicate that the majority of the public

vocational schools require the completion of at least the sixth grade of the elementary school. A few of the schools reporting make no grade requirement. A few schools require the completion of some grade between the eighth and tenth before a pupil is permitted to begin specific vocational training. This is particularly true for vocational high schools. Some of the State trade schools require in addition to the 14-year age limit that the applicant have the equivalent of at least eight grades of school work and that he be able to profit by the instruction for which he is seeking training. Some of these schools emphasize that he must be physically fit. The Trott Vocational School, of Niagara Falls, N.Y., is an example of a vocational school requiring 1 year of high-school work before entrance upon a vocational course.

VALUE OF BUILDINGS AND GROUNDS, AND ENDOWMENTS

Most of the schools listed in table 7 reported on value of buildings and grounds. The total value of buildings and grounds for 39 of the larger schools selected from this table is $20,781,926. Six schools have buildings and grounds valued at more than a million dollars.

Of the private schools reporting, 13 of the larger ones, listed below, were selected for data furnished on endowments. These 13 private vocational and technical schools have endowments totaling $28,307,872.

Cogswell Polytechnic College, San Francisco, Calif	$1, 222, 872
Pullman Free School of Trades, Chicago, Ill	2, 880, 000
Farm and Trades School, Boston, Mass	500, 000
Dunwoody Industrial Institute, Minneapolis, Minn	5, 000, 000
Ranken School of Mechanical Trades, St. Louis, Mo	4, 000, 000
Hebrew Technical Institute, New York City	655, 000
West Side Y.M.C.A. Trade and Technical School, New York City	350, 000
Baron de Hirsch Trade School, New York City	2, 500, 000
Ohio Mechanics Institute, Cincinnati, Ohio	1, 000, 000
Andrews School for Girls, Willoughby, Ohio	4, 500, 000
Spring Garden Institute, Philadelphia, Pa	200, 000
Rhode Island School of Design, Providence, R.I	3, 000, 000
Williamson Free School of Mechanical Trades, Williamson School, Pa	2, 500, 000

LIBRARIES AND GYMNASIUMS

Of 150 schools answering the question, "Is there a library or other reading room available to students for reading and study?" 102 schools say "yes", and 48 "no." Of 152 schools answering the question, "Is there a gymnasium?" 76 say "yes", 76 "no".

Of the 69 schools for which data are recorded in table 7, 56 report affirmatively and 12 negatively on the question of library facilities. One school reports the use of reference books in the various departments. Forty-two of the schools in this table report having a gymnasium; 27 report negatively on this question.

TABLE 1.—*Number of months 160 public and private schools (123 public and 37 private) are in session, by kinds of schools*

Kind of school	Number of months in session							Total number of schools
	12	11	10	9	8	7	6	
1	2	3	4	5	6	7	8	9
Private technical schools	6	2	2	1	1	0	1	13
Private vocational schools	10	2	5	5	2	0	0	24
Public technical schools (including technical high schools)	0	1	11	8	0	1	[1] 1	22
Public vocational schools (including vocational departments in regular high schools)	21	11	51	14	2	0	[1] 2	101
Total	[2] 37	16	69	28	5	1	4	160

[1] Evening school only.
[2] Most of these schools, especially the public ones, have a short summer vacation, but are open for instruction 48 or more weeks per year.

TABLE 2.—*Enrollments and teachers in 21 public technical high and technical-trade schools*

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
CALIFORNIA										
Fresno: Fresno Technical High School	x			654		654	14	13	2	1
Oakland: Technical Evening High School	x			2,000	2,000	4,000	12	8	2	0
Riverside: Polytechnic High School	x			1,535	455	1,990	30	25	21	19
San Luis Obispo: The California Polytechnic School		x		252		252	19	2		
INDIANA										
Hammond: Hammond Technical Vocational School	x			950		950	22	20		
Indianapolis: Arsenal Technical High School	x			6,111		6,111	119	130		
MARYLAND										
Baltimore: Baltimore Polytechnic Institute		x		2,805	922	3,727	100	1		
MASSACHUSETTS										
Cambridge: Rindge Technical School		x		1,450		1,450	67	14		
Springfield: Evening Technical School	x				450	450	13	6		
MICHIGAN										
Detroit: Cass Technical High School	x			4,619	2,500	7,132	84	59	5	2
Grand Rapids: Geo. A. Davis Vocational and Technical High School	x			1,608	483	2,087	22	12	13	6

TABLE 2.—*Enrollments and teachers in 21 public technical high and technical-trade schools*—Continued

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
MISSOURI										
Kansas City: Lathrop Polytechnic Institute	------	x	------	600	300	900	36	2	1	0
NEW JERSEY										
Jersey City: William L. Dickinson Technical School	x	------	------	2,510	350	2,860	95	126	------	------
Newark: Newark Technical School [1]	x	------	------	------	1,005	1,005	------	------	86	0
NEW YORK										
Amsterdam: Continuation and Technical High School	x	------	------	400	------	400	4	6	------	------
Buffalo: Buffalo Technical High School	x	------	------	2,084	745	2,829	52	38	------	------
Rochester: Thomas Alva Edison Technical and Industrial High School	------	x	------	915	------	915	50	------	------	------
OHIO										
Cleveland: East Technical High School	------	x	------	3,729	431	4,160	92	21	1	1
PENNSYLVANIA										
Scranton: Technical High School	x	------	------	3,362	340	3,402	38	66	0	0
TENNESSEE										
Chattanooga: Technical and Vocational School	x	------	------	541	1,500	1,941	7	10	13	20
TEXAS										
Dallas: Dallas Technical High School	x	------	------	2,122	(2)	2,122	33	37	0	0
Total	15	6	0	38,247	11,481	49,337	909	596	144	49

[1] Requires two years of high-school work for entrance to evening classes.
[2] No report on night school which gives vocational courses under separate administration from the day school.

TABLE 3.—*Enrollments and teachers in 33 private technical and trade schools*

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
DISTRICT OF COLUMBIA										
Washington:										
Bliss Electrical School		x		140		140	14	0		
Columbia School of Drafting	x			100	400	500	2	0	16	0
ILLINOIS										
Chicago:										
Greer College	x			150	231	312	9	0	1	0
Pullman Free School of Manual Training	x			560		560	18	9	1	1
Elgin: Elgin Watchmakers College		x		25		25	4	0		
INDIANA										
Indianapolis: Y.M.C.A. Evening School	x			0	65	65			6	0
MASSACHUSETTS										
Boston:										
The Farm and Trades School		x		85		85	6	2		
Designers Art School	x			70	17	87	3	0	2	3
MICHIGAN										
Flint: General Motors Institute		x		351	220	571	24	0	20	0
MINNESOTA										
Minneapolis: Dunwoody Industrial Institute		x		1,400	2,600	4,000	35	0	30	0
MISSOURI										
St. Louis: The David Ranken Junior School of Mechanical Trades		x		275	301	568	18	0	10	0
NEW YORK										
New York:										
West Side Y.M.C.A. Trade and Technical School		x		80	140	220	6	0	3	0
The Stewart Technical Trade School		x		50	75	100	4	0	1	0
Baron de Hirsch Trade School		x		160		160	9	0		
R.C.A. Institutes, Inc	x			135	128	263	8	0	4	0
Clarence H. White School of Photography	x			17	11	28	3	1		
School of Printers' Apprentices	x			60		60	2	2	2	0
Mechanics Institute		x		0	3,998	3,998	0	0	60	
New York Institute of Photography	x			77	74	151	5	0		
Hebrew Technical Institute		x		360		360	19	1		
NORTH DAKOTA										
Fargo: Hanson Auto-Tractor and Electrical School		x		75		75	4	0		
OHIO										
Cincinnati: Ohio Mechanics Institute	x			234	341	566	19	2	19	1
Columbus: Columbus Y.M.C.A. Trade School		x		20	18	37	1	0	2	0
Willoughby: The Andrews School for Girls			x	255		255	3	16	0	1
OREGON										
Portland: Oregon Institute of Technology	x			96	40	136	6	0	1	0

TABLE 3.—*Enrollments and teachers in 33 private technical and trade schools*—Con.

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
PENNSYLVANIA										
Downingtown: Industrial and Agricultural School	x			84		84	5	4	0	2
Farm School: The National Farm School		x		175	0	175	18	0	0	0
Lancaster: Bowman Technical School of Watchmaking and Jewelry Work	x			35	0	35	5	0		
Philadelphia: Spring Garden Institute	x			0	350	350			21	0
Philadelphia School of Wireless Telegraphy		x			0	20	2	0		
Williamson School: Williamson Free School of Mechanical Trades		x		157		157	8	1		
RHODE ISLAND										
Providence: Rhode Island School of Design	x			450	600	1,050	15	4	24	10
VIRGINIA										
Richmond: Virginia Mechanics Institute [1]	x			0	711	711	0	0	48	0
Total	16	16	1	5,696	10,320	15,904	275	42	271	18

[1] Coeducational for a few classes.

TABLE 4.—*Enrollments and teachers in 98 public trade and vocational schools*

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
ALABAMA										
Gadsden: Alabama School of Trades		x		144		144	6	1		
CALIFORNIA										
Chino: Chino Vocational School		x		109		109	7			
Los Angeles: Frank Wiggins Trade School	x			2,205	1,680	3,885	50	23	1	2
COLORADO										
Denver: Opportunity School [1]	x					9,000	12	40		
CONNECTICUT										
Danbury: Danbury State Trade School		x		180		180	9			
Meriden: State Trade School	x			347	50	397	16			
Middletown: State Trade School		x		144		144	7			

[1] Only total enrollment given in report.

TABLE 4.—*Enrollments and teachers in 98 public trade and vocational schools*—Con.

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
							Full-time		Part-time	
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
CONNECTICUT—Continued										
New Britain: State Trade School		x		500	100	600	20			
Putnam: State Trade School		x		192	23	215	10		2	
South Manchester: State Trade School	x			275	125	400	11	1		
Torrington: Connecticut State Trade School		x		160		160	8			
Willimantic: Willimantic State Trade School		x		150		150	8			
DELAWARE										
Wilmington: Wilmington Trade School		x		350	300	650	9	1		
FLORIDA										
St. Petersburg: Vocational School	x			203	300	500	4	3	9	1
Tampa: Brewster Vocational School	x			707	258	965	5	5		
GEORGIA										
Atlanta: Opportunity School	x			1,102	107	1,209	2	15	2	2
ILLINOIS										
Spring Valley: Hall Township High and Vocational School	x			420		420	8	7	2	
KENTUCKY										
Louisville: Theodore Ahrens Trade School	x			1,187		1,187	25	1		
LOUISIANA										
New Orleans:										
F. T. Nicholls Vocational School			x	672	608	1,280		28		1
Isaac Delgado Trades School		x		490	1,045	1,535	26	1	11	
MASSACHUSETTS										
Beverly: Beverly Trade School		x		112		112	9			
Boston: Massachusetts Nautical School		x		118		118	8		1	
Chicopee: Chicopee Trade School		x		183		183	10			
Fall River:										
Bradford Durfee Textile School	x			123	469	592	11		20	3
Diman Vocational School		x		53		53	4			
Holyoke: Holyoke Vocational School		x		204		204	13			
Lawrence: Industrial Evening School		x			125	125			7	
Lowell: Lowell Vocational School	x			300		300	16	10		2
Lynn: Lynn Independent Industrial Shoemaking School	x			121	154	275	3	3	2	5
New Bedford:										
New Bedford Vocational School	x			628	1,244	1,872	30	14	29	37
New Bedford Textile School	x			142	1,065	1,207	14		14	2
Newtonville: Newton Trade School		x		205	143	368	16		4	4
Quincy: Quincy Trade School		x		188	30	218	14			
Springfield: Trade School		x		540	125	660	28			
Waltham: Waltham Trade School		x		132	100	232	10			
Worcester: Worcester Boys Trade School		x		1,054	772	1,826	63			1

TABLE 4.—*Enrollments and teachers in 98 public trade and vocational schools*—Con.

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Full-time		Part-time	
							Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
MARYLAND										
Baltimore:										
Colored Vocational School	x			467	224	691	10	7	4	2
Boys Vocational School		x		815	430	1,245	31			
Girls Vocational School			x	509		668		22		
Ottmar Mergenthaler School of Printing		x		92	110	202	5		3	
MICHIGAN										
Battle Creek: Vocational School [2]	x				281	281	10	10		
Hamtramck: Vocational School		x		160	301	461			6	1
Jackson: Vocational School	x			500	25	525	12	11		
Saginaw: Arthur Hill Trade School		x		240		240	11	1		
MINNESOTA										
Minneapolis:										
Boys Vocational School		x		512		512	22		2	
Miller Vocational School				1,487	1,200	2,687	6	64		1
MISSOURI										
St. Louis: Hadley Vocational	x			2,663	1,038	3,701	47	42		2
NEW JERSEY										
Atlantic City: Boys Vocational School		x		479		479	17	1		
Elizabeth: Boys Vocational School		x		250	750	1,000	11		21	1
Merchantville: Camden County Vocational School	x			560	900	1,460	24	6	14	
Trenton: School of Industrial Arts	x			443	736	1,179	10	2	24	6
Passaic: Vocational School		x		121	428	549	8	3	4	2
Paterson: Edison Vocational School		x		343		343	13			
NEW YORK										
Albany: Industrial High School		x		113	349	462	8	1	9	
Buffalo:										
McKinley Vocational High School		x		463	355	818	22		1	
Burgard Vocational High School		x		841	1,133	1,974	44		2	
Peckham Vocational High School		x		568	365	911	28			
Mount Vernon: Edison Vocational School	x			322		322	12	8	1	3
New York City:										
New York Industrial High School		x		1,339	1,358	2,697	47			
Textile High School	x			7,364	2,837	10,201	81	95	34	20
New York School of Printing		x		2,000	500	2,300	13	1	1	
New York State Merchant Marine Academy		x		157		157	10			
Stuyvesant Evening Trade School	x				1,350	1,350	13		18	
Murray Hill Industrial High School		x		1,238	986	2,224	75	3		
Niagara Falls: Trott Vocational	x			517		517	21	5	4	2
NORTH CAROLINA										
Burgaw: Burgaw School	x			228		228	3	9		
NORTH DAKOTA										
Wahpeton: North Dakota State College of Science	x			200		200	17			

[2] No separate student body.

TABLE 4.—*Enrollments and teachers in 98 public trade and vocational schools*—Con.

Name and location of school	The school enrolls—			Enrollments			Number of teachers			
	Men and women	Men only	Women only	Day	Night	Total (duplicates excluded)	Full-time		Part-time	
							Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
OHIO										
Cincinnati:										
Building Industrial Vocational High School	------	x	-------	125	175	275	10	-------	------	-------
Automotive Vocational High School	------	x	-------	605	484	1,089	31	-------	------	-------
Electrical Vocational High School	------	x	-------	395	279	674	20	2	------	-------
Printing Vocational High School	------	x	-------	334	143	477	11	4	------	1
Sewing Vocational High School	x	------	-------	395	190	585	3	19	------	-------
Mechanical Vocational High School	------	x	-------	155	168	323	16	1	------	-------
Commercial Service Vocational High School	x	------	-------	847	-------	847	1	20	------	-------
Retail Selling Vocational High School	x	------	-------	410	-------	410	------	9	------	-------
Cleveland: Trade School	------	x	-------	700	60	760	16	-------	1	-------
Findlay: Vocational School	------	x	-------	65	-------	65	3	1	------	-------
Springfield: Auto Trade School	------	x	-------	48	-------	48	2	-------	------	-------
Toledo: Vocational School	x	------	-------	909	-------	909	32	6	------	-------
PENNSYLVANIA										
Bethlehem: Broughal High School	x	------	-------	[3] 420	-------	420	[4] 20	[4] 2	------	-------
Lancaster: Thaddeus Stevens Industrial School	------	x	-------	58	-------	58	7	-------	------	-------
Navy Yard, Philadelphia, Pa., State Nautical School	------	x	-------	90	-------	90	8	-------	1	-------
Pittsburgh:										
Allegheny Vocational School	------	x	-------	750	400	1,150	24	-------	------	-------
Somers Trade School	------	x	-------	265	-------	265	10	-------	------	-------
Washington Trade School	------	x	-------	595	204	799	18	2	9	-------
RHODE ISLAND										
Central Falls: Trade School	------	x	-------	98	72	170	6	-------	1	-------
Providence: Trade School	x	------	-------	413	-------	413	16	5	------	-------
TEXAS										
Fort Worth: Vocational School	------	x	-------	150	900	1,000	9	1	8	23
Goose Creek: Goose Creek School	------	x	-------	60	-------	60	6	-------	------	-------
VERMONT										
Springfield: High School	x	------	-------	565	-------	565	9	19	------	-------
St. Johnsbury: Vocational High School	------	x	-------	50	-------	50	2	3	------	-------
WASHINGTON										
Everett: High School (vocational department)	x	------	-------	[3] 644	-------	644	[3] 5	-------	------	-------
WISCONSIN										
Eau Claire: Vocational School	x	------	-------	330	887	1,267	3	3	8	5
Green Bay: Vocational School	x	------	-------	987	2,900	3,500	12	11	26	19
Kenosha: Vocational School	------	x	-------	750	1,000	1,750	12	7	------	2
Stevens Point: Vocational School	x	------	-------	107	190	297	2	2	5	3
Watertown: Vocational School	x	------	-------	95	715	810	3	3	15	11
Wausau: Central Vocational School	x	------	-------	560	424	984	7	7	3	1
Total	40	56	2	50,606	33,670	[5] 92,813	1,447	571	329	165

[3] Vocational students only.
[4] Vocational teachers only.
[5] The fact that the total enrollment is larger than the combined enrollments for day and night classes is accounted for by the report of one large school which gave only the total enrollment.

TABLE 5.—*Number of schools, by kinds, by sex enrolled, and by day and night classes, giving the subjects indicated. (Total number of schools, 160, of which 123 are public and 37 are private)*

Subject of instruction	Vocational and trade schools				High schools (regular, vocational, and industrial)				Technical schools, including technical high schools			
	Enrolls men		Enrolls women		Enrolls men		Enrolls women		Enrolls men		Enrolls women	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	2	3	4	5	6	7	8	9	10	11	12	13
Accounting										1		
Advertising	1	1	1	1								
Agriculture	1								2			
Architectural drafting	4	8	1		7	2		1	5	1	1	1
Art and drawing	5		2						6	3	1	2
Art metal	2	1	2	1								1
Art needlework			1	1								
Art novelty				2								
Auto electricity	2	2										
Auto mechanics	46	30	1	1	6	3			16	8		
Aviation mechanics, including metal work	28	16	1	1	4	3			13	7		
Baking	2	2										
Barbering	1	3										
Battery (electric storage)	2					1			1	1		
Beauty culture			3	1			1	1				
Blueprint reading	3	4	1						1	2		
Bookbinding	1		1		1		1					
Bookkeeping	5	3	2	1					2		1	
Bricklaying	7	7			1	1			2			
Building estimating	1	4								2		
Business and office practice	1		1		1	1			1			
Cabinetmaking	13	8			1	1			5	2		
Carpentry	30	19			6	2			5	1		
Cement									1			
Ceramics		1										
Clothing			1	2								
Commercial		1		1					1	1	2	
Commercial art	6	2	4	3					6	2	4	
Comptometry										1		
Cooking			5								3	1
Costume designing			2				1				3	3
Dietetics			1									
Drafting	47	8	2	1	8	1			16	4	1	2
Dressmaking			6	8							3	3
Dry cleaning	1	2			1							
Electricity	52	27			6	5			20	4		
Engine theory	1											
Engineering	4	3			2	2			1	2		
Foods and nutrition			2	2							1	
Forging	2	1							2			
Foundry	2	1							2			
Fresco painting	1	1										
Furniture	1	1							2	1	1	1
Heat treatment (metals)	1	1										
Home economics			3	1			2				3	
Hand composition (printing)	2	2										
Interior decorating	2	2	3						2	2		2
Jewelry repair									1			
Linotype	2	2			1	1				2		
Lithography					1	1			2			
Machine design									3	2		
Machine drawing	17	14			2	2			8	5		
Machine shop	45	26			8	2			15	8		
Mechanics, theory									3	1		
Millinery			5	2								

TABLE 5.—*Number of schools, by kinds, by sex enrolled, and by day and night classes, giving the subjects indicated. (Total number of schools, 160, of which 123 are public and 37 are private)*—Continued

Subject of instruction	Vocational and trade schools				High schools (regular, vocational, and industrial)				Technical schools, including technical high schools			
	Enrolls men		Enrolls women		Enrolls men		Enrolls women		Enrolls men		Enrolls women	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	2	3	4	5	6	7	8	9	10	11	12	13
Millwork (wood)	3	3							1			
Monotype	1	1										
Nursing (including prenursing)			3	1								
Painting and decorating	14	6			2							
Patternmaking	12	4			2				6	2		
Plastering	1	2										
Plumbing	18	17			3	2			1	1		
Power-plant operation	1	3				1			2			
Power sewing			9	2							2	1
Press work (printing)	2	3			4	1						
Printing	24	14	1		8	6			9	3		
Radio operating	1	2							2	3		
Radio repairing	3	6							7	5		
Salesmanship	2		2		1	1	1	2	2	1	2	1
Secretarial	2	2	1	1					1	1	1	1
Sheet metal	17	8			4	3			5			
Shoe repairing	1											
Shoemaking	1											
Show-card writing	7	6	4	3	1	2			1	1		
Sign painting	4	4	1	1					1	1	1	1
Silversmithing	1	1										
Slide rule	1	1										
Steam engineering	3	2			1	1			1	1		
Stenography	4	3	4	3					1		1	
Structural drafting					1				1			
Surveying	1	1								1		
Tailoring	3		2	1								
Textile manufacturing		1		1								
Textiles	3	1	1	1								
Tire repair						1						
Toolmaking	1	3							1	1		
Typing	3	1	2								1	
Waitress training			1									
Watch-case making		1										
Watchmaking	1											
Welding	13	11			3				4			
Wood and metal finishing	1								1			
Woodworking	7	5		1	2				2			

TABLE 6.—*Number of schools, classified as to kinds, giving instruction in subjects as indicated. (Total number of schools, 137)*

Kind of school	Number of schools	Mathematics				Literature				English				History				Economics				Science				Drafting			
		N[1]	S[1]	C[1]	SC[1]	N	S	C	SC	N	S	C	SC	N	S	C	SC	N	S	C	SC	N	S	C	SC	N	S	C	SC
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Public trade and vocational schools	89	4	63	9	13	47	18	21	3	11	50	18	10	46	23	17	3	39	28	15	7	14	53	9	13	10	57	7	15
Public technical high schools and technical-trade schools	19	0	18	0	1	5	10	4	0	0	18	1	0	0	15	4	0	5	13	1	0	1	16	2	0	0	18	1	0
Private technical, trade, and vocational schools	29	5	18	5	1	17	8	4	0	13	13	3	0	16	11	2	0	21	6	2	0	9	15	4	1	5	17	6	1

[1] N, subject not given; S, subject given as a separate course; C, subject given in combination with some other subject; SC, subject given both as a separate course and as combined with some other subject.

TABLE 7.—*Data on value of buildings and grounds and on library and gymnasium provisions for 69 public and private vocational and technical schools*

Name and location of school	The school is—		Value of buildings and grounds	Number of—		There is a—			
	Public	Private		Library books	Periodicals	Library or study room		Gymnasium	
						Yes	No	Yes	No
1	2	3	4	5	6	7	8	9	10
ALABAMA									
Gadsden: Alabama School of Trades	x		$125,000	25	5		x		x
CALIFORNIA									
Chino: Chino Vocational School	x		3,000	3,000	25	x		x	
Fresno: Technical High School	x		(1)	2,765	25	x		x	
Los Angeles: Frank Wiggins Trade School	x		850,000	2,347	115	x			x
Oakland: Technical Evening High School	x		200,000	(2)	(2)		[2] x		[2] x
Riverside: Polytechnic High School	x		503,000	6,600	73	x		x	
San Francisco: Cogswell Polytechnic College [3]		x	360,818	1,800	23	x			x
CONNECTICUT									
South Manchester: State Trade School	x		150,000	(1)	8	x		x	
Willimantic: State Trade School	x		50,000	100	10	x			x
DISTRICT OF COLUMBIA									
Takoma Park: Bliss Electrical School		x	300,000	650	9	x			x
FLORIDA									
St. Petersburg: Vocational School	x		100,000	200	10	x			x
ILLINOIS									
Chicago: Pullman Free School of Manual Training		x	600,000	4,000	30	x		x	
Spring Valley: Hall Township High and Vocational School	x		220,000	3,500	19	x		x	
KENTUCKY									
Louisville: Theodore Ahrens Trade School	x		600,000	(1)	(1)	x		x	
LOUISIANA									
New Orleans: Isaac Delgado Trades School		[4] x	1,200,000	1,200	(1)	x			x
MARYLAND									
Baltimore:									
Boys Vocational School	x		[5]	863	14	x		x	
Polytechnic Institute	x		(1)	8,000	20	x		x	
MASSACHUSETTS									
Boston: Farm and Trades School		x	500,000	1,000	15	x		x	
Fall River: Bradford-Durfee Textile School	x		325,000	200	5		x		x
Lowell: Vocational School	x		100,000	(1)	8		x	x	
New Bedford: Textile School	x		(1)	1,000	9	x		x	
Springfield: Trade School	x		327,300	150	8	x			x
Waltham: Trade School	x		20,500	[6] 100	10	x		[7] x	
Worcester: Boys Trade School	x		381,670	(1)	14	x		x	

[1] Not reported.
[2] Not used by evening students.
[3] Requires graduation for entrance and prepares for employment in the lower levels of engineering lines of work.
[4] Partially under public control and partially publicly supported.
[5] Building formerly used for high school.
[6] Public library also available to students.
[7] Use high-school gymnasium.

TABLE 7.—*Data on value of buildings and grounds and on library and gymnasium provisions for 69 public and private vocational and technical schools*—Contd.

Name and location of school	The school is—		Value of buildings and grounds	Number of—		There is a—			
	Public	Private		Library books	Periodicals	Library or study room		Gymnasium	
						Yes	No	Yes	No
1	2	3	4	5	6	7	8	9	10
MICHIGAN									
Detroit: Cass Technical School	x		(1)	7,475	20	x		x	
Flint: General Motors Institute		x	750,000	3,000	27	x		x	
Grand Rapids: G. A. Davis Vocational and Technical High School	x		1,000,000	1,600	27	x		x	
Hamtramck: Vocational School	x		120,000	200	9	x		x	
Jackson: Vocational School	x		280,000	2,000	15	x		x	
Saginaw: Arthur Hill Trade School	x		125,000	(1)	5	x			x
MINNESOTA									
Minneapolis:									
Boys Vocational School	x		(1)	1,040	19	x		x	
Miller Vocational School (High)	x		800,000	4,000	20	x		x	
William Hood Dunwoody Industrial Institute		x	1,000,000	5,500	50	x		x	
MISSOURI									
Kansas City: Lathrop Polytechnic Institute	x		375,000	(1)	12	(8)		x	
St. Louis:									
David Ranken Junior School of Mechanical Trades		x	525,000	3,787	42	x		x	
Hadley Vocational School	x		2,000,000	2,800	59	x		x	
NEW JERSEY									
Merchantville: Camden County Vocational School	x		1,000,000	1,554	31	x		x	
Passaic: Vocational School	x		(1)	8,000	7	x		x	
Paterson: Edison Vocational School	x		300,000	2,500	3		x		x
NEW YORK									
Buffalo:									
Burgard Vocational High School	x		1,500,000	2,064	22	x		x	
McKinley Industrial High School	x		1,000,000	2,514	6	x		x	
Peckham Vocational High School	x		600,000	800	17	x		x	
Technical High School	x		(1)	4,136	12	x		x	
New York City:									
Textile High School	x		6,000,000	8,000	150	x		x	
Hebrew Technical Institute		(9)	391,000	5,300	23	x		x	
New York School of Printing	x		(1)	1,050	40	x			x
West Side Y.M.C.A. Trade and Technical School		x	350,000	30,000	125	x		x	
Baron de Hirsch Trade School		x	600,000	150	12		x		x
Mechanics Institute (free school)		x	325,000	114,000	(1)	x			x
Niagara Falls: Trott Vocational School	x		(1)	1,689	60	x		x	
OHIO									
Cincinnati:									
Ohio Mechanical Institute		x	1,200,000	14,000	150	x		x	
Building Vocational High School	x		75,000	250	5		x		x
Automotive Vocational High School	x		180,000	770	18		x		x
Printing Vocational High School	x		200,000	400	2	x			x
Sewing Vocational High School	x		200,000	150	(1)		x	x	
Mechanical Vocational High School	x		75,000	150	6		x		x
Cleveland: Trade School	x		300,000	1,713	20	x			x
Willoughby: Andrews School for Girls		x	620,000	1,000	45	x		x	
OREGON									
Portland: Oregon Institute of Technology		x	60,000	325	15	x		x	

[1] Not reported.
[8] Building formerly used for high school.
[8] Reference books in various departments.
[9] Semipublic.

TABLE 7.—*Data on value of buildings and grounds and on library and gymnasium provisions for 69 public and private vocational and technical schools*—Contd.

Name and location of school	The school is—		Value of buildings and grounds	Number of—		There is a—			
	Public	Private		Library books	Periodicals	Library or study room		Gymnasium	
						Yes	No	Yes	No
1	2	3	4	5	6	7	8	9	10
PENNSYLVANIA									
Downingtown: Industrial and Agricultural School	------	x	100,000	1,000	20	x	-----	x	-----
Lancaster: Bowman Technical School of Watchmaking and Jewelry Work and Engraving	------	x	30,000	300	7	x	-----	-----	x
Philadelphia: Spring Garden Institute	------	x	300,000	250	10	x	-----	-----	x
Williamson School: Williamson Free School of Mechanical Trades	------	x	1,000,000	5,000	32	x	-----	x	-----
RHODE ISLAND									
Providence: Rhode Island School of Design	------	x	1,000,000	9,500	55	x	-----	-----	x
Central Falls: Trade School	x	------	46,900	50	5	-----	x	-----	x
TENNESSEE									
Chattanooga: Technical and Vocational School	x	------	60,000	500	10	x	-----	-----	x
TEXAS									
Fort Worth: Vocational School	x	------	35,000	25	30	-----	x	-----	x
VIRGINIA									
Richmond: Virginia Mechanical Institute	------	x	226,000	4,000	32	x	-----	-----	x
WISCONSIN									
Green Bay: Vocational School	x	------	280,000	900	30	x	-----	x	-----
Total	------	------	----------	--------	--------	56	12	42	27

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